Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

aim of one to hold the mirror up to the world of Parmenides, the task of the other is to find something like an effective adjustment in the world of Heraclitus.

WENDELL T. BUSH.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Yale Psychological Studies. New Series, Vol. I. No. 2. *Monograph Supplement, Psychological Review,* Vol. VIII., No. 3, June, 1907. Baltimore: The Review Publishing Co. Pp. 227–423.

This number of the *Yale Psychological Studies* contains five reports of investigations concerned in different ways with the general subject of the connection between motor adjustments and consciousness. The first studies the vocal production of tones; the second, movements made in writing; the third, hefting equal weights of unequal size; the fourth, reproduction of simple percepts by means of drawing; the fifth, eye movements in convergence and divergence.

The paper on "Tonal Reactions" is by Edward Herbert Cameron. Dr. Cameron experimented with seven men of various degrees of musical training and ability. His experiments were of three kinds. In the first he had each man sing three tones—one of high, one of medium, and one of low pitch, all of the subject's own selection—and sustain the note selected in each case as uniformly as possible for a moderate length of time. In another series of experiments each subject was required to imitate a standard note sounded on an organ pipe. In still another series, while the subject was imitating the standard organ note, another tone was sounded from another part of the scale for the purpose of distracting his attention. The vibrations of the reactor's voice were recorded, by means of a mica diaphragm with connecting levers, on smoked paper. The records were read by means of a special device.

The results of the first series of experiments showed that the pitch of the tones, which the men tried to sustain uniformly, varied from moment to moment. The beginnings were irregular; there was a rise in the first tenth of a second, followed by fluctuations and a tendency to raise the pitch towards the end of the tone. When short intervals of rest were interposed the results were not different.

In imitating standard tones there was a general tendency to sing higher than the standard. The imitation was a little more exact when the standard kept on sounding than when it ceased before the subject began. Different individuals, as might be expected, showed different degrees of ability. There were more errors with low than with high notes.

The experiments on distraction were made by sounding a note, sometimes higher, sometimes lower, than the standard; sometimes harmonious and sometimes inharmonious with the standard, and at varying intervals from it. The distracting tone began as soon as or before the sung tone.

When distraction occurred, which could be determined by comparison with the results of the first series of experiments, it was sometimes in the direction of the distracting tone, sometimes in the opposite direction. In 20 cases out of 29 where distraction was plainly apparent, the distracting tone and the standard were discordant. In 25 cases the distracting tone and sung tone were harmonious. The author concludes that a discordant tone is more distracting than a harmonious tone; and that the tone sung under the influence of a distracting tone is usually harmonious with the latter.

The paper ends with a discussion of the neural conditions which the author supposes to explain these results. The results are in agreement with the view that the nervous impulse is not continuous, but intermittent. "The process of reaction and control may be described as one of constant nervous readjustment." The author, further, accepts MacDougall's theory that the degree of consciousness depends upon the resistance offered by the synapses, or junctions of neurones, in the motor channel. He conceives that adjustments of motor discharge to sensory excitement in the "motor circle" go on without the reactor's voluntary participation. The addition of sensory excitement may result in modification of the special motor discharge, the pitch sung; or the equilibrium in the motor circle may maintain itself and the additional excitement pass off through other channels.

The paper on "Preliminary Experiments on Writing Reactions," by Frank Nugent Freeman, describes an apparatus for obtaining records that show all the details of rate and pressure in the kinds of movement usually made in writing or drawing. The experiments were made with short, straight lines, squares and circles. The reactor was required to begin, to stop, or to turn at a signal.

It was found, in general, that the start was made more quickly than the stop. When the movement to be executed was complicated the time of starting was slower than when a simple movement was intended. In these experiments, as in those of the first paper, the subject's introspective observations were also taken. The significance of the results, as summed up by the writer, is in agreement with the conclusions of the writer of the preceding paper. "The results of this investigation emphasize the unity of a reaction process and emphasize further the complete parallelism between the conscious attitude as a whole to the reaction complex as a whole, while showing clearly that consciousness does not reflect in detail the factors of the reaction."

The third paper, on "Reactions to Equal Weights of Unequal Size," by Herbert N. Loomis, describes a method of recording the movements which are executed in lifting two boxes of equal weight, but unequal size. The small box was mounted on a shelf which brought it up to a level with the top of the large box. Linen threads attached to the bottom of each box were passed over pulleys beneath and connected with levers whose movements were traced on smoked paper. Thirty-six reactors were experimented with, and four hundred records made. The reactors were told to raise the weights, one with each hand, in as nearly the same manner as possible; to raise them in any way preferred; to estimate their relative weight and then to replace them.

In the great majority of cases the large box rose before the small one, in the earlier tests. As the subjects became acquainted with the illusion, this precedence of the large box fell off. The energy expended in hefting the large box, shown by the areas of the curves, was also greater than that used in hefting the small one, and this continued throughout the series of experiments. The results show that a subject has much greater muscular tension in the hand which lifts the large box than in the hand which lifts the small box. The writer concludes that this is "the direct expression of an organized habit of response to familiar visual object." This organized habit is not entirely overcome in the later tests even by the experience of the earlier tests. The irregularities in the second and subsequent tests are thought to be related to the conflict between the natural tendency to react differently to the two boxes and the recently acquired experience. "The muscular tension is not due to any voluntary effort, but is the motor phase of a total sensory-motor adjustment which is the perceptual process."

The paper on "Studies in Perceptual Development" is signed by the editor, Professor Charles H. Judd, and Professor Donald J. Cowling. The results of the experiments reported in this paper do not lend themselves to tabulation. The writers mention as one motive for their investigation the desire to provide a convenient laboratory exercise illustrating mental development. A simple figure composed of straight and curved lines was exposed for ten seconds and the subject requested to draw it. This was repeated with the same figure ten or more times. In one group of tests the subject drew with his eyes closed; in another, he saw the movements of his hand, but not the drawing; in a third, he saw what he was drawing. Several sets of drawings are reproduced and discussed in detail.

It is not assumed that the growing perfection of successive drawings was due to training in execution, but to the growing distinctness of the percept. Different subjects learn the figure in different ways—some beginning at one end, some at the other, and some in the middle. In general the work was most accurate when the subject could see his drawing, but there were exceptions to this rule. Improvement in correcting the size of the figure did not go along with improvement in shape. This seems to the writers "to justify the distinction between the sensory and perceptual processes which are involved in recognizing position and size."

The last paper, by the editor, reports a series of photographs on the movements of the eyes in convergence and divergence. The apparatus was the kinetoscope camera used as reported in an earlier number of the *Yale Studies*, with the addition of a mechanical device for driving the camera so as to obtain uniform motion. As described in the earlier paper, a speck of Chinese white placed on the cornea served as the luminous point to be photographed. Five subjects were employed in the investigation, one being blind in his right eye. The convergence and divergence of the eyes took place in fixating alternately one or another of two points placed at unequal distances. The points were sometimes in the median plane between the eyes, sometimes in lateral positions, and especially in the axis of vision of one eye.

The photographs, of which a number are sketched, show that there is a lack of harmony in the movements of an individual's two eyes. One eye may move while the other stands still; or one may make a long movement while the other makes a short one. The character of this lack of harmony is different in different individuals. The writer thinks it is due to external muscular causes, differences of muscular balance or tension, and not to internal nervous adjustments.

The movements of convergence and divergence take a long time compared with simple lateral movements. The adjustments are complex, consisting of a main adjustment in which the fixation is approximated and fine adjustments resulting in satisfactory fixation.

The photographs show that there is a tendency of a fundamental character for both eyes to move laterally in the same direction. The converging and diverging movements have to overcome this tendency. The fundamental character of this tendency is shown when the fixation points are in the axis of vision of one of the eyes, making it unnecessary for that eye to move at all. It, nevertheless, executes a complicated series of movements in sympathy with the other eye. The unseeing eye of the blind subject moved in sympathy with the seeing eye.

Monocular adjustment, when one eye is covered, is shown to be of a simpler character. The covering of one eye, however, does not give perfect monocular adjustment. The covered eye is known to move, and exerts an influence on the movements of the seeing eye.

An interesting set of drawings is given that shows the movements of the eyes in a subject who attempts to make two points fuse stereoscopically without the help of an instrument. The photograph of the eye movements of a subject who finds difficulty in effecting the fusion shows the tendency towards sympathetic lateral movement constantly balking his efforts.

In his theoretical discussion the writer argues against a direct relationship between sensations of eye movement and the visual perception which the movements bring about. The sensations of movement are not analyzed out of the total situation. Many of the movements, moreover, are in direct opposition to the character of the adjustment which the subject is aiming to attain.

The writer reaffirms the theory, expressed in a former paper, that movement is a central mode of organization, and that retinal sensation controls the binocular adjustment that ends in fusion of images.

A. LIPSKY.

NEW YORK CITY.

Folkways. W. G. SUMNER. Boston: Ginn & Co. 1907. Pp. iv + 692.

Professor Sumner has rendered a service to sociology in calling attention to the importance of the study of what he terms *mores.* A distinct gap is filled by this dissertation, the text for which has been furnished *en passant* by Professor E. von Hartmann in his work on moral philos-